

In re Application of: Ehud GAZIT  
 Serial No.: 10/562,852  
 Filed: April 19, 2006  
 Office Action Mailing Date: December 16, 2008

Examiner: DUTT, Aditi  
 Group Art Unit: 1649  
 Attorney Docket: 31230

**In the claims:**

1. (Currently Amended) A synthetic or recombinant dipeptide comprising consisting of the amino acid sequence X-Y or Y-X, wherein X is an aromatic amino acid and Y is ~~any a beta-breaker amino acid other than glycine, the peptide being at least 2 and no more than 15 amino acids in length.~~

2-11. (Canceled)

12. (Currently Amended) The synthetic or recombinant peptide of claim 1, selected from the group consisting of SEQ ID NOs. ~~4, 12-19, 27-45, 112-121, 122, 123, 125, 127, 128-144, 145, 146, 147, 148 and 149 and 150.~~

13-39. (Canceled)

40. (Withdrawn) A method of treating or preventing an amyloid-associated disease in an individual, the method comprising providing to the individual a therapeutically effective amount of a peptide including the amino acid sequence X-Y or Y-X, wherein X is an aromatic amino acid and Y is any amino acid other than glycine, said peptide being at least 2 and no more than 15 amino acids in length.

41-71. (Canceled)

72. (Currently amended) A pharmaceutical composition ~~for treating or preventing an amyloid-associated disease comprising as an active ingredient a the~~ synthetic or recombinant peptide including the amino acid sequence X-Y or Y-X, wherein ~~X is an aromatic amino acid and Y is any amino acid other than glycine, said peptide being at least 2 and no more than 15 amino acids in length~~ of claim 1 and a pharmaceutically acceptable carrier or diluent.

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73. (Withdrawn) The pharmaceutical composition of claim 72, wherein Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine and natural derivatives thereof.

74. (Canceled)

75. (Withdrawn) The pharmaceutical composition of claim 74, wherein said  $\beta$ -sheet breaker amino acid is a naturally occurring amino acid.

76. (Withdrawn) The pharmaceutical composition of claim 75, wherein said naturally occurring amino acid is selected from the group consisting of proline, aspartic acid, glutamic acid, glycine, lysine and serine.

77. (Currently Amended) The pharmaceutical composition of claim ~~74~~72, wherein said  $\beta$ -sheet breaker amino acid is a synthetic amino acid.

78. (Original) The pharmaceutical composition of claim 77, wherein said synthetic amino acid is a  $C\alpha$ -methylated amino acid.

79. (Original) The pharmaceutical composition of claim 78, wherein said  $C\alpha$ -methylated amino acid is  $\alpha$ -aminoisobutyric acid.

80. (Canceled)

81. (Currently Amended) The pharmaceutical composition of claim 72, wherein said peptide is selected from the group consisting of SEQ ID NOs. ~~4, 12-19, 27-45, 112-123, 125 and 127~~121, 122, 123, 144, 145, 146, 147, 148 and 149.

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82. (Withdrawn) The pharmaceutical composition of claim 72, wherein said peptide is at least 4 amino acids in length and includes at least two serine residues at a C-terminus thereof.

83. (Withdrawn) The pharmaceutical composition of claim 72, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide other than X-Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine and natural derivatives thereof.

84. (Withdrawn) The pharmaceutical composition of claim 72, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide other than X-Y is a  $\beta$ -sheet breaker amino acid.

85. (Withdrawn) The pharmaceutical composition of claim 84, wherein said  $\beta$ -sheet breaker amino acid is a naturally occurring amino acid.

86. (Withdrawn) The pharmaceutical composition of claim 85, wherein said naturally occurring amino acid is selected from the group consisting of proline, aspartic acid, glutamic acid, glycine, lysine and serine.

87. (Withdrawn) The pharmaceutical composition of claim 84, wherein said  $\beta$ -sheet breaker amino acid is a synthetic amino acid.

88. (Withdrawn) The pharmaceutical composition of claim 87, wherein said synthetic amino acid is a C $\alpha$ -methylated amino acid.

89. (Withdrawn) The pharmaceutical composition of claim 88, wherein said C $\alpha$ -methylated amino acid is  $\alpha$ -aminoisobutyric acid.

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90. (Withdrawn) The pharmaceutical composition of claim 84, wherein said  $\beta$ -sheet breaker amino acid is located downstream to said X-Y in said peptide.

91. (Withdrawn) The pharmaceutical composition of claim 84, wherein said  $\beta$ -sheet breaker amino acid is located upstream to said X-Y in said peptide.

92. (Withdrawn) The pharmaceutical composition of claim 72, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide is a positively charged amino acid and at least one of said amino acids of said peptide is a negatively charged amino acid.

93. (Withdrawn) The pharmaceutical composition of claim 92, wherein said positively charged amino acid is selected from the group consisting of lysine, arginine, and natural and synthetic derivatives thereof.

94. (Withdrawn) The pharmaceutical composition of claim 92, wherein said negatively charged amino acid is selected from the group consisting of aspartic acid, glutamic acid and natural and synthetic derivatives thereof.

95. (Currently Amended) The pharmaceutical composition of claim 72, wherein at least one amino acid of said amino acid sequence ~~at least 2 and no more than 15 amino acids of the peptide~~ is a D stereoisomer.

96. (Withdrawn) The pharmaceutical composition of claim 72, wherein at least one amino acid of said at least 2 and no more than 15 amino acids of the peptide is an L stereoisomer.

97-98. (Canceled)

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99. (Withdrawn) The pharmaceutical composition of claim 72, wherein the peptide is 3 amino acids in length, whereas Y is an aromatic amino acid and an amino acid residue attached to said amino acid sequence X-Y or Y-X is a  $\beta$ -sheet breaker amino acid.

100. (Withdrawn) The pharmaceutical composition of claim 99, wherein said  $\beta$ -sheet breaker amino acid is at a C-terminus of the peptide.

101. (Withdrawn) The pharmaceutical composition of claim 72, wherein the peptide is at least 3 amino acids in length and includes a thiolated amino acid at an N-terminus thereof.

102. (Withdrawn) A nucleic acid construct comprising a polynucleotide segment encoding the peptide of claim 1.

103-117. (Canceled)

118. (Withdrawn) An antibody or an antibody fragment comprising an antigen recognition region capable of binding the peptide of claim 1.

119-140. (Canceled)

141. (Withdrawn) A pharmaceutical composition for treating or preventing an amyloid-associated disease comprising as an active ingredient an antibody or an antibody fragment having an antigen recognition region capable of binding the peptide of claim 1 and a pharmaceutical acceptable carrier or diluent.

142-147. (Canceled)

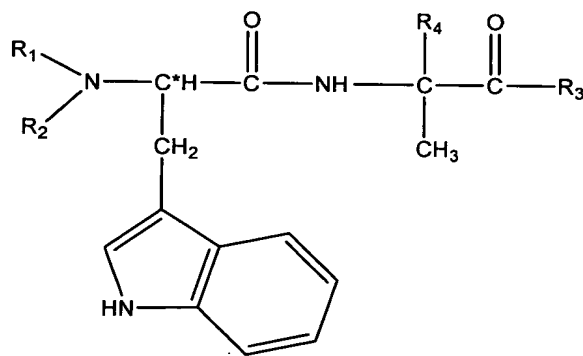
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148. (Withdrawn) A method of treating or preventing an amyloid-associated disease in an individual, the method comprising providing to the individual therapeutically effective amount of an antibody or an antibody fragment having an antigen recognition region capable of binding the peptide of claim 1, thereby treating or preventing the amyloid-associated disease in the individual.

149-154. (Canceled)

155. (Withdrawn) A peptide having the general Formula:



wherein:

C\* is a chiral carbon having a D configuration.

R<sub>1</sub> and R<sub>2</sub> are each independently selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, carboxy, C-thiocarb;

R<sub>3</sub> is selected from the group consisting of hydroxy, alkoxy, aryloxy, thiohydroxy, thioalkoxy, thioaryloxy, halo and amine; and

R<sub>4</sub> is alkyl.

156. (Withdrawn) The peptide of claim 155, wherein R<sub>4</sub> is methyl.

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157. (Withdrawn) The peptide of claim 155, wherein  $R_1$  and  $R_2$  are each hydrogen and  $R_3$  is hydroxy.

158. (Withdrawn) The peptide of claim 155 is a cyclic peptide.

159. (Previously Presented) A method of treating or preventing an amyloid-associated disease in an individual, the method comprising providing to the individual a therapeutically effective amount of the peptide

160-162. (Canceled)

163. (New) A synthetic or recombinant peptide selected from the group consisting of SEQ ID NOs. 4, 12-19, 27-45, 112-123, 125, 127, 128-149 and 150